

CONTACT START PLASMA ARC TORCH AND  
METHOD OF INITIATING A PLASMA ARC TORCH

ABSTRACT OF THE DISCLOSURE

A contact start plasma arc torch is provided that comprises an electrode, a tip, and an initiator that is resiliently biased into contact with the tip, the initiator being movable against the resilient bias to separate from the tip and establish a pilot arc between the initiator and the tip. The initiator is disposed within a start cartridge, which preferably comprises a coil spring that biases the initiator into contact with the tip. The plasma arc torch further comprises a plurality of head vent holes to vent gas from within the start cartridge during operation of the torch. Additionally, the tip defines a plurality of swirl holes and secondary gas holes to generate and control a plasma stream that is subsequently blown from a central exit orifice in the tip.